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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WILLIS, RANDAL L	

ART UNIT	PAPER NUMBER
2629	

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03/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/677,970	COLEY ET AL.	
	Examiner	**Art Unit**	
	RANDAL WILLIS	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _10 December 2007_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-5,9-18,20-28 and 30-32_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-5,9-18,20-28 and 30-32_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to arguments in application No 10/677970 filed 12/10/2007. Claims 1-5, 9-18, 20-28, 30-32 are pending and have been examined.

Response to Arguments

2. Applicant's arguments filed 12/10/2007 have been fully considered but they are not persuasive. Applicant argues that Tanada doesn't teach detecting and correcting luminance values at different regions of the display screen, however Examiner is interpreting each pixel of Tanada to be a small region of the display screen, Tanada teaches correcting each pixel ([0122]).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5,9,11,13-18,20,22-28,30,32 rejected under 35 U.S.C. 102(b) as being anticipated by Tanada (2002/0047550).

Apropos claim 1, Tanada teaches:

A self-calibrating imaging display system comprising:

a display having a screen (light emitting device shown in Fig 1);

a display adaptor communicatively linked the display for causing the display to display upon the screen a test pattern (switch 113 that initiates the display pattern [0111]),

a plurality of photosensors integrated with said screen (photoelectric conversion elements 106, Fig 1), said photosensors detecting luminance values correlating to distinct luminance levels at different regions of said screen ([0107] lines 10-15, each pixel can be considered a region of the screen);

a calibration module (brightness detection procedure [0109]) said calibration module directing the display adaptor to generate at least one measurement field comprising a region spanning no more than 10% of the screen (each pixel displayed in test pattern, a pixel is inherently less than 10% of the display [0118]) and cause the measurement field to be stepped through a sequence of values from zero and increasing at each step up to a maximum display driving level (DDL) ([0106] lines 8-11, correction being important for case where signal is 111111 (max brightness) and 00000 [0125]), said calibration module receiving from said photosensors inputs correlating to said luminance values ([0118] lines 10-14), said calibration module determining a plurality of luminance correction factors, different ones of said luminance correction factors being applied to different regions of said screen which are applied to adjust luminance of said screen at the different regions, each region spanned by a corresponding measurement field ([0119]).

Apropos claim 2, Tanada teaches:

The self calibrating imaging display system of claim 1, wherein said at least one photo sensor comprises an array of photosensors (106 shown in array in Fig. 1).

Apropos claim 3, Tanada teaches:

The self calibrating imaging display system of claim 2, wherein said array of photosensors comprises photosensors horizontally and vertically dispersed over a portion of said screen(See Fig 1, pixels shown in array layout both horizontally and vertically).

Apropos claim 4, Tanada teaches:

The self calibrating imaging display system of claim 3, wherein said portion is a region of said screen comprising at least 90% of a surface area of said transparent sheet (Every pixel is 100% of screen, [0118] lines 6-10).

Apropos claim 5, Tanada teaches:

The self calibrating imaging display system of claim 1, wherein said at least one photosensor is formed into said screen (106, Fig. 1).

Apropos claim 9, Tanada teaches:

The self calibrating imaging display system of claim 7, wherein said calibration module automatically updates said luminance correction factor at predetermined intervals ([0108] lines 4-7 and [0109]).

Apropos claim 11, Tanada teaches:

The self calibrating imaging display system of claim 7, said calibration module generating a calibration record upon an update of said luminance correction factor (correction data stored in data storage prtion 102, non-volatile memory [0108] lines 1-3).

Apropos claim 13, Tanada teaches:

A self-calibrating imaging display system comprising:

a display having a screen (light emitting device shown in Fig 1);

a display adaptor communicatively linked the display for causing the display to display upon the screen a test pattern (switch 113 that initiates the display pattern [0111]),

a plurality of photosensors integrated with said screen (photoelectric conversion elements 106, Fig 1), said photosensors detecting color values (stated that color can be treated same as greyscale [0018] lines 11-13) correlating to distinct color levels at different regions of said screen ([0107] lines 10-15, each pixel can be considered a region of the screen);

a calibration module (brightness detection procedure [0109]) said calibration module directing the display adaptor to generate at least one measurement field

comprising a region spanning no more than 10% of the screen (each pixel displayed in test pattern, a pixel is inherently less than 10% of the display [0118]) and cause the measurement field to be stepped through a sequence of values from zero and increasing at each step up to a maximum display driving level (DDL) ([0106] lines 8-11, correction being important for case where signal is 111111 (max brightness) and 00000 [0125]), said calibration module receiving from said photosensors inputs correlating to said color values ([0118] lines 10-14), said calibration module determining a plurality of color correction factors, different ones of said color correction factors being applied to different regions of said screen which are applied to adjust luminance of said screen at the different regions, each region spanned by a corresponding measurement field ([0119]).

Apropos claim 14, Tanada teaches:

The self calibrating imaging display system of claim 13, wherein said at least one photo sensor comprises an array of (Photosensor region for each pixel illuminated, Fig. 2, Col 3 lines 29-34).

Apropos claim 15, Tanada teaches:

A method of calibrating an imaging display system comprising the steps of:

Generating at least one measurement field comprising a region spanning no more than 10% of the screen (each pixel displayed in test pattern, a pixel is inherently less than 10% of the display [0118]) and cause the measurement field to be stepped

through a sequence of values from zero and increasing at each step up to a maximum display driving level (DDL) ([0106] lines 8-11, correction being important for case where signal is 111111 (max brightness) and 00000 [0125])

receiving luminance values from a plurality of photosensors integrated with the display screen ([0118] lines 10-14), said photosensors detecting distinct luminance levels at different regions of said screen ([0119]); and

from said detected luminance levels, determining a plurality of luminance correction factors which are applied to different regions of said screen so as to adjust luminance of said screen at the different regions, each region spanned by a corresponding measurement field ([0119]).

Apropos claim 16, Tanada teaches:

The method of calibrating an imaging display system according to claim 15, wherein said at least one photo sensor comprises an array of photosensors (Photosensor region for each pixel illuminated, Fig. 2, Col 3 lines 29-34).

Apropos claim 17, Tanada teaches:

The method of calibrating an imaging display system according to claim 16, wherein said array of photosensors comprises photosensors horizontally and vertically dispersed over a portion of said transparent sheet (See Fig 1, pixels shown in array layout both horizontally and vertically in Tanada, which would line up with photosensor regions 22, and 26 in Kikinis).

Apropos claim 18, Tanada teaches:

The method of calibrating an imaging display system according to claim 17, wherein said portion is a region of said screen comprising at least 90% of a surface area of said screen(Sheet 33, Fig. 3 covers entire area of display screen and detects each pixel).

Apropos claim 20, Tanada teaches:

The method of calibrating an imaging display system according to claim 15, further comprising the step of automatically updating said luminance correction factor at predetermined intervals ([0108] lines 4-7 and [0109]).

Apropos claim 22, Tanada teaches:

The method of calibrating an imaging display system according to claim 15, further comprising the step of generating a calibration record upon an update of said luminance correction factor (correction data stored in data storage portion 102, non-volatile memory [0108] lines 1-3).

Apropos claim 23, Tanada teaches:

A method of calibrating an imaging display system comprising the steps of:

Generating at least one measurement field comprising a region spanning no more than 10% of the screen (each pixel displayed in test pattern, a pixel is inherently less than 10% of the display [0118]) and cause the measurement field to be stepped

through a sequence of values from zero and increasing at each step up to a maximum display driving level (DDL) ([0106] lines 8-11, correction being important for case where signal is 111111 (max brightness) and 00000 [0125])

receiving distinct color values from a plurality of photosensors integrated with the display screen ([0118] lines 10-14, [0018] lines 11-13) said photosensors detecting color levels at different regions of said screen (photonsenors detect grayscale of each pixel [0118]); and

from said detected color levels, determining a plurality of luminance correction factors which are applied to different regions of said screen so as to adjust color levels of said screen at the different regions, each region spanned by a corresponding measurement field ([0119]).

Apropos claim 24, Tanada teaches:

The method of calibrating an imaging display system according to claim 23, wherein said at least one photo sensor comprises an array of photosensors (Photosensor region for each pixel illuminated, Fig. 2, Col 3 lines 29-34).

Apropos claim 25, Tanada teaches:

A machine-readable storage (non-volatie memory 100, Fig 1)having stored thereon a computer program having a plurality of code sections, the code sections executable by a machine for causing the machine to perform the steps of (100 stores the correction values and the test pattern, [0108] lines 1-6):

Generating at least one measurement field comprising a region spanning no more than 10% of the screen (each pixel displayed in test pattern, a pixel is inherently less than 10% of the display [0118]) and cause the measurement field to be stepped through a sequence of values from zero and increasing at each step up to a maximum display driving level (DDL) ([0106] lines 8-11, correction being important for case where signal is 111111 (max brightness) and 00000 [0125])

receiving at least one luminance value from at least one photosensor integrated with a screen of a display ([0107] lines 10-13), said photosensor detecting luminance levels of said screen ([0118] 1-3);

and from said detected luminance levels, determining at least one luminance correction factor which is applied to adjust luminance of said screen ([0120] lines 1-5) at different regions, each region spanned by a corresponding measurement field.

Apropos claim 26, Tanada teaches:

The machine-readable storage of claim 25, wherein said at least one photo sensor comprises an array of photosensors (Photosensor region for each pixel illuminated, Fig. 2, Col 3 lines 29-34).

Apropos claim 27, Tanada teaches:

The machine-readable storage of claim 26, wherein said array of photosensors comprises photosensors horizontally and vertically dispersed over a portion of said transparent sheet (See Fig 1, pixels shown in array

layout both horizontally and vertically in Tanada, which would line up with photosensor regions 22, and 26 in Kikinis).

Apropos claim 28, Tanada teaches:

The machine-readable storage of claim 27, wherein said portion is a region of said screen comprising at least 90% of a surface area of said transparent sheet (Sheet 33, Fig. 3 covers entire area of display screen and detects each pixel).

Apropos claim 30, Tanada teaches:

The machine-readable storage of claim 25, further comprising the step of automatically updating said luminance correction factor at predetermined intervals ([0108] lines 4-7 and [0109]).

Apropos claim 32, Tanada teaches:

The machine-readable storage of claim 25, further comprising the step of generating a calibration record upon an update of said luminance correction factor (correction data stored in data storage portion 102, non-volatile memory [0108] lines 1-3).

5. Claims 10, 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada (2002/0047550) in view of Ramamurthy (6,121,949).

Apropos claims 10, 21, and 31 Tanada teaches all of the limitations of the preceding claims, however fail to explicitly teach updating said luminance correction factor responsive to a user input.

In the same field of preserving image quality in display systems, Ramamurthy teaches allowing a user to select screen parameters to be update to improve the quality of the display (Col 3 lines 42-51).

Therefor it would have been obvious to one of ordinary skill in the art at the time of the invention to allow the user to control quality of the display though application software as taught by Ramamurthy in the display of Tanada in order to insure that the quality of the display is maintained.

6. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada (2002/0047550) in view of Cok (6,836,260).

Apropos claim 12, Tanada teaches the self calibrating display, however fails to explicitly teach utilizing the display in a medical imaging display.

In the same field of detecting luminance and degradation in display system, Cok teaches the use of such displays is critical in the medical fields.

Therefor it would have been obvious to one of ordinary skill in the art at the time of the invention to use the self calibrating display of Tanada in a medical image display

as shown by Cok in order to provide a reliable display for such critical data to be displayed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RANDAL WILLIS whose telephone number is (571)270-1461. The examiner can normally be reached on Monday to Thursday, 8am to 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RLW

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629